

In the Claims:

Claims 1 to 7 (Canceled).

1 8. (Currently amended) A milling method for the production of  
2 a structural component from at least one material that is  
3 difficult to machine by chip-cutting, while producing  
4 depressions with at least one sidewall, whereby a milling  
5 tool is moved along at least one defined tool path for the  
6 milling, characterized in that, in addition to the or each  
7 tool path, at least one collision contour respectively  
8 corresponding to a surface or an edge of the at least one  
9 sidewall of the structural component to be produced is  
10 defined and the position or orientation of the milling tool  
11 along the or each tool path relative to the or each  
12 collision contour is monitored in an automated comparison  
13 of the or each tool path with the or each collision contour  
14 to determine whether an expected collision exists between  
15 the milling tool and the at least one collision contour  
16 corresponding to the surface or the edge of the structural  
17 component to be produced, and if the expected collision is  
18 determined to exist then the position or orientation of the  
19 milling tool is changed and/or an error message is  
20 generated ~~if at least one of the collision contours is to~~  
21 ~~avoid the structural component being damaged by the milling~~  
22 ~~tool. tool, and whereby the or each collision contour~~  
23 ~~relates to the structural component to be produced.~~

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1 9. (Currently amended) The method according to claim 8,  
2 characterized in that the position or orientation of the  
3 milling tool along the or each tool path relative to the  
4 structural component to be milled produced are determined  
5 by a tool vector, whereby the tool vector is defined with  
6 a cutting advance angle and a pitch angle of the milling  
7 tool.

1 10. (Previously presented) The method according to claim 8,  
2 characterized in that, for the milling of the depressions  
3 that are bounded by two of the sidewalls, two collision  
4 contours are defined, of which a first collision contour  
5 lies on a first said sidewall and a second collision  
6 contour lies on a second said sidewall.

1 11. (Currently amended) The method according to claim 10,  
2 characterized in that, when the milling tool damages the  
3 collision contour that lies on the sidewall that is  
4 currently to be milled, the position or orientation of the  
5 milling tool is changed so that the ~~damage of~~ expected  
6 collision of the milling tool with the collision contour is  
7 ~~removed-~~ avoided.

1 12. (Currently amended) The method according to claim 11,  
2 characterized in that a pitch angle of a tool vector is  
3 increased for changing the position or orientation of the

4       milling tool so that the ~~damage of~~ expected collision of  
5       the milling tool with the collision contour is ~~removed.~~  
6       avoided.

1    13. (Currently amended) The method according to claim 10,  
2       characterized in that, when the milling tool ~~damages~~ is  
3       expected to collide with the collision contour that lies on  
4       the sidewall lying opposite the sidewall that is currently  
5       to be milled, an error protocol and/or an error message is  
6       generated.

1    14. (Previously presented) The method according to claim 13,  
2       characterized in that the error protocol is used for the  
3       dimensioning of the milling tool.

1    15. (Previously presented) The method according to claim 13,  
2       characterized in that the error protocol is used for  
3       determining a miller diameter of the milling tool.

1    16. (Previously presented) The method according to claim 8,  
2       characterized in that the structural component to be  
3       produced is an integral bladed rotor for a gas turbine,  
4       wherein the depressions form flow channels and the  
5       sidewalls form blade surfaces of the integral bladed rotor.

1    17. (Currently amended) The method according to claim 8,  
2       wherein the error message is generated if the milling tool

3        is expected to collide with at least one of the collision  
4        contours. ~~contours is damaged by the milling tool.~~

Claim 18 (Canceled).

1        19. (Previously presented) The method according to claim 8,  
2        wherein each said collision contour corresponds to one of  
3        the edges of the component to be produced.

1        20. (Currently amended) The method according to claim 19,  
2        wherein each said collision contour is respectively defined  
3        by moving the milling tool along and in contact with a  
4        respective one of the edges of a sample of the component to  
5        be produced.

1        21. (Currently amended) A method of producing a milled  
2        component by milling a raw material with a milling tool,  
3        comprising the steps:

- 4        a) defining a proposed tool path along which said milling  
5        tool will be moved to mill said raw material into a  
6        desired milled shape of said milled component, wherein  
7        said tool path defines the space that will be occupied  
8        by said milling tool as said milling tool is moved to  
9        mill said raw material;
- 10       b) defining at least one collision contour of said  
11       desired milled shape of said milled component, wherein  
12       each said collision contour establishes a respective

13 boundary which may not be crossed by said proposed  
14 tool path to avoid damaging said desired milled shape  
15 of said milled component to be produced;

16 c) comparing said proposed tool path with said at least  
17 one collision contour to determine whether said  
18 proposed tool path crosses said at least one collision  
19 contour;

20 d) if said proposed tool path is determined to cross said  
21 at least one collision contour in said step c), then  
22 generating a collision signal indicative of a  
23 collision, and in response to said collision signal,  
24 revising said proposed tool path to thereby define a  
25 final tool path that will not cross said at least one  
26 collision contour;

27 e) if said proposed tool path is determined not to cross  
28 said at least one collision contour in said step c),  
29 then using said proposed tool path as said final tool  
30 path; and

31 f) milling said raw material by moving said milling tool  
32 along said final tool path to produce said milled  
33 component.

1 22. (Previously presented) The method according to claim 21,  
2 wherein said collision signal comprises an error message  
3 indicating to an operating personnel that said collision  
4 has been determined.

1 23. (Previously presented) The method according to claim 21,  
2 wherein said collision signal comprises an error protocol  
3 that is carried out if said collision has been determined.

Claim 24 (Canceled).

1 25. (Previously presented) The method according to claim 21,  
2 wherein said step of defining said at least one collision  
3 contour comprises moving said milling tool along and in  
4 contact with at least one edge of a sample model that has  
5 said desired milled shape of said milled component, wherein  
6 said at least one edge thereby defines said at least one  
7 collision contour.

Claim 26 (Canceled).

1 27. (Previously presented) The method according to claim 21,  
2 wherein each said collision contour corresponds to an edge  
3 of said desired milled shape of said milled component.

1 28. (Previously presented) The method according to claim 21,  
2 wherein said comparing in said step c) is carried out as an  
3 automated comparison.

1 29. (New) The method according to claim 19, wherein each said  
2 collision contour respectively corresponds exactly to only  
3 one of the edges of the component to be produced, and said

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4 at least one collision contour does not collectively define  
5 an entire topography of a surface of the structural  
6 component to be produced.

1 30. (New) The method according to claim 27, wherein each said  
2 collision contour respectively corresponds exactly to only  
3 one said edge of said desired milled shape of said milled  
4 component, and said at least one collision contour does not  
5 collectively define an entire topography of said desired  
6 milled shape of said milled component.